

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (original): An adsorbent for selective removal of sulfur from a hydrocarbon feedstock, comprising:

a matrix material having a surface area of at least about 400 m<sup>2</sup>/g and a surface acidity of less than about 0.20 μmol/m<sup>2</sup>; and

a metal phase dispersed through said matrix, said metal phase being selective to reversible adsorption of sulfur.

Claim 2 (original): The adsorbent of claim 1, wherein said matrix material has surface acidity of less than about 0.05 μmol/m<sup>2</sup>.

Claim 3 (original): The adsorbent of claim 1, wherein said matrix material has a surface area of between 400 m<sup>2</sup>/g and about 1200 m<sup>2</sup>/g.

Claim 4 (original): The adsorbent of claim 1, wherein said matrix material has a surface area of between about 600 m<sup>2</sup>/g and about 1000 m<sup>2</sup>/g.

Claim 5 (original): The adsorbent of claim 1, wherein said metal phase is present at a surface atomic concentration ratio of between about 80 and about 500.

Claim 6 (original): The adsorbent of claim 1, wherein said matrix is selected from the group consisting of siliceous oxides, alumina, molecular sieves, structurally ordered materials and combinations thereof.

Claim 7 (original): The adsorbent of claim 1, wherein said matrix is siliceous oxide.

Claim 8 (original): The adsorbent of claim 1, further comprising a binder disposed through said matrix.

Claim 9 (original): The adsorbent of claim 1, wherein said metal phase comprises a metal having one of a d5 and d10 electron configuration.

Claim 10 (original): The adsorbent of claim 1, wherein said metal phase is selected from Group IB, IIB, VII B and VIII of the periodic table of elements, and combinations thereof.

Claim 11 (original): The adsorbent of claim 1, wherein said metal phase is a Group VIII metal.

Claim 12 (original): The adsorbent of claim 1, wherein said metal phase is present at a surface of said matrix material as particles having a particle size of less than or equal to about 10nm.

Claims 13-27 (cancelled).

Claim 28 (original): A method for preparing an adsorbent for selective removal of sulfur from a hydrocarbon stream, comprising the steps of:

providing a matrix material;

forming said matrix material to form shaped adsorbent elements; and

contacting said elements with a transition metal solution so as to disperse said metal through said matrix and provide said adsorbent.

Claim 29 (original): The method of claim 28, wherein said adsorbent has a surface area of at least about 400 m<sup>2</sup>/g and a surface acidity or less than about 0.20  $\mu\text{mol}/\text{m}^2$ .